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ABSTRACT

This qualitative investigation examined the strategy knowledge of preservice teachers in a field-based program. Subjects were 24 preservice teachers in a field-based program. Recursive analyses of their field teaching lessons and post lesson interviews revealed a continuum of strategy awareness ranging from limited to metacognitive levels. First semester interns were found to be more procedural and skill-oriented in their implementation than were second semester residents. Generally the preservice teachers were familiar with and used a repertoire of strategies that included reading strategies and general instructional strategies as well as instructional approaches and ways of organizing instruction. Recursive analyses of preservice teachers' reasons for selecting and using particular strategies revealed that the residents' rationale was more developed, process oriented, and student-centered than the interns' rationale. Findings suggest that the central focus of residents' rationale was independent lifelong learning while the central focus of interns' rationale was the acquisition of information. Guided reflection during post lesson interviews appeared to increase preservice teachers' awareness of the purposes and conditions for strategy use. Consequently, a pre/post reflection guide was developed to focus preservice teachers' attention on elements of strategic instruction, specifically the conditions involved and the development of this knowledge in students. (Contains four figures and 31 references; various sample forms are appended.) (Author/CR)

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Running Head: Preservice Teachers' Rationale for Strategies

The Why Behind the What: Preservice Teachers' Rationale for Strategies Selected and Taught in Field-Based Teaching Lessons

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Abstract

This qualitative investigation examined the strategy knowledge of twenty-four preservice teachers in a field-based program. Recursive analyses of their field teaching lessons and post lesson interviews revealed a continuum of strategy awareness ranging from limited to metacognitive levels. First-semester interns were found to be more procedural and skill-oriented in their implementation than were second-semester residents. Generally the preservice teachers were familiar with and used a repretoire of strategies that included reading strategies and general instructional strategies as well as instructional approaches and ways of organizing instruction. Recursive analyses of preservice teachers' reasons for selecting and using particular strategies revealed that the residents' rationale was more developed, process oriented, and student-centered than interns' rationale. The central focus of residents' rationale emerged as independent lifelong learning while the central focus of interns' rationale was found to be the acquisition of information. Guided reflection during post lesson interviews appeared to increase preservice teachers' awareness of the purposes and conditions for strategy use. Consequently, a pre/post reflection guide was developed to focus preservice teachers' attention on elements of strategic instruction, specifically the conditions involved and the development of this knowledge in students.

Strategies have been associated with success in learning and expertise in reading (Paris, Lipson, Wixson, 1983; Paris, Wasik, & Turner, 1991; Pressley & Afflerbach, 1995). The use of strategies in learning is considered by most educators to be a crucial element in the development of independent, self-regulated learners (Paris, Lipson, & Wixson, 1983). Unlike skills, "strategies are flexible plans for solving problems encountered in constructing meaning" (Duffy, 1993, p. 232). Strategic readers are characterized not by the number of strategies they use, but by their appropriate selection and coordination of strategies that fit the text, situation, and purpose (Paris, Wasik, and Turner, 1991; Pressley, Borkowski, Schneider, 1987; Pressley, Goodchild, Fleet, Zajchowski, & Evans, 1989). Thus, strategy knowledge consists not only of declarative knowledge, a repertoire of strategies and procedural knowledge, the ability to apply a strategy. In addition, learners must know under what conditions, or when and why, particular strategies work best. Moreover, they need to be metacognitive (Baker and Brown, 1984) about strategies, consciously monitoring their understanding and resolving misunderstanding by modifying and applying strategies (Pressley, Borkowski, & O'Sullivan, 1984). This knowledge is considered essential for generalization and transfer of strategies to new situations (O'Sullivan & Pressley, 1984).

By developing a conscious awareness about the conditions of strategy use, teachers can help students become metacognitive and regulate their own learning. Pressley and colleagues have

recommended that teachers should directly teach when and where to use strategies in conjunction with modeling and providing guided practice because children do not efficiently discover this knowledge or apply it independently (Pressley, Goodchild, et al., 1989; Pressley, Levin, Ghatala, 1984). Teachers who analyze why they are doing what they do, make decisions about materials and instruction, and are responsive to students have been shown to develop better readers (Duffy, Roehler, & Putnam, 1987). As Duffy (1993) argues, strategic instruction is not as much a matter of deciding which strategies to teach, but of developing in students "an integrated concept of what it means to be strategic" (p. 231). If teachers are to develop in students the ability to select, use strategies flexibly and effectively, teachers themselves must have a metacognitive understanding of strategies. That is, teachers need to be cognizant of the conditions associated with particular strategies and help their students develop this knowledge. Unfortunately, as Manzo (1991) indicates, strategies rarely are "demonstrated and practiced in supervised settings by pre- or in-service teachers" (p. 67).

This study was designed to explore preservice teachers' knowledge of strategy instruction, particularly their rationale for selecting and implementing strategic instruction during field teaching experiences. The purpose in examining preservice teachers' strategy instruction was two-fold. We wanted to gain insight about our preservice teachers' strategy knowledge in an effort to improve their effectiveness as teachers. In a broader

sense, we saw the application of strategy theory/research in preservice teacher education as an area needing further investigation. We believe this study will make a contribution to literacy research and instruction with implications for teacher preparation.

Review of Research

In the studies of teacher knowledge about strategic instruction, only a few have focused on the development of preservice teachers' conditional knowledge about strategies (O'Brien, D.G., & Stewart, R.A., 1990; Roehler, Duffy, Conley, Hermann, Johnson, Michelson, 1987). Several educators suggest that strategy instruction should be connected with real teaching situations in order to develop independent decision-making (Hollingsworth and Teel, 1991; Ogle, 1989).

"Situated cognition," or the development of knowledge as an outgrowth of experience, (Brown, Collins, & Duguid, 1989) provides support for learning about strategies during field teaching experiences. Placing novice teachers in real teaching situations makes it possible for them to construct an integrated understanding about strategic teaching that reflects a cultural awareness of the classroom. Given that expert teachers are found to link their knowledge to relevant classroom factors when making instructional decisions, teaching experiences are essential in bridging theory and practice (Roehler, Duffy, Hermann, Conley, Johnson, 1988). While expert teachers have numerous classroom experiences, preservice teachers lack teaching experiences, making it more

difficult to make such connections.

Teacher educators need to move beyond instruction that merely presents strategies to instruction that helps preservice teachers match strategies to actual teaching situations. Reinking, Mealey, and Ridgeway, (1993) have recommended that teacher education activities engage preservice teachers in analysis of teaching contexts and provide information about the rationale for using specific strategies. A constructivist environment within this field-based setting provides optimal opportunities for preservice teachers to plan and create strategic activities that help children use strategies to enhance their own learning.

Furthermore, as Duffy and Roehler (1987) have suggested, preservice teachers need to become responsive decision-makers. They need to learn how to give explanations and prompts that assist students' strategy use and promote the development of conditional knowledge. In essence, they must bend and shape strategy instruction not only to match the situation but to develop in students the ability to monitor, modify, and adjust strategies to serve their own purposes that will lead to independent, self-regulated learning.

To build a conceptual understanding about strategies or "thoughtfulness" in both teachers and students, strategy instruction needs to be embedded in authentic literacy events (Duffy, 1993). To accomplish this, teachers must make decisions based on professional knowledge rather than on prescriptive methods and materials. Moreover, teachers need to make conditional

knowledge as visible to students as possible by thinking aloud to communicate their reasons while modeling strategies. This not only prompts students to think about the reasons behind the strategies but helps them realize that they can regulate or take charge of their thinking (Duffy, 1993; Duffy, Roehler, & Hermann, 1988; Roehler & Duffy, 1991).

One of the better ways to build this conceptual understanding is through reflective inquiry about teaching (Schon, 1987; Shulman, 1987). According to Shulman (1987), the purpose of reflective inquiry is "to make the implied more explicit" so teachers will consider the reasoning that supports their instructional decisions (p. 480). Alvermann (1990) recommends the development of inquiry-oriented models of reading teacher education that involve preservice and inservice teachers and focus on the acquisition of knowledge and implicit theories used to guide instruction in various settings. Likewise, more naturalistic studies are needed to transfer implications to real classrooms (Alvermann, 1990). Field teaching experiences offer an ideal learning environment for the naturalistic study of preservice teachers' application of strategies in a classroom context and their developing knowledge related to strategy instruction. Not only is the field experience conducive to reflective inquiry about strategy instruction in connection with real teaching situations, it offers opportunities for teacher educators to examine preservice teachers' strategy instruction in process.

This exploratory study marks the beginning of our attempts to

describe preservice teachers' rationale behind the strategies they use in their field-teaching lessons. This study was guided by the following questions:

* What is the nature of preservice teachers' strategy knowledge during their field teaching experience?

* What is preservice teachers' rationale for selecting and using strategies in their field-based teaching lessons?

Methods

Using qualitative methods the authors collaboratively designed and conducted this study to investigate preservice teachers' knowledge of strategy instruction. All of the authors worked with the participating preservice teachers as university faculty and liaisons in a yearlong, field-based program. The university liaison is responsible for facilitating reflection and assessment activities for preservice teachers, assisting mentor teachers with the planning and coordination of assignments for preservice teachers, fostering communication between the university and public school, and assisting in ways that enhance the learning of K-12 students.

To keep this study as non-intrusive to classroom routines as possible, preservice teachers were not instructed to use any particular strategies over others or to implement them in prescriptive ways. Rather, we stressed the importance of modification and flexible implementation of strategies integrated with the daily curriculum.

The Field-Based Program

In this yearlong, field-based teacher education program field experiences are coupled with weekly, daylong seminars taught at the university by a team of professors. Seminars consist of small and large group activities in which strategy instruction is integrated with content reading, social studies, math, and science methods, and technology courses. Preservice teachers have numerous opportunities to work together in small groups to plan mock teaching lessons in which they incorporate strategies to support children's interaction with a variety of text -- informational and narrative, textbooks and children's literature. These small group activities often are followed by large group discussions led by a team of instructors to encourage the preservice teachers to share their work, reflect, and discuss the why, what and how of behind their selection of strategies. Preservice teachers also use as a resource a content reading text in which numerous strategies are delineatd (Vacca & Vacca, 1996). Seminar instructors place strong emphasis on learner-centered instruction and encourage preservice teachers to incorporate strategies in their field-based teaching lessons.

Participants

Twenty-four elementary preservice teachers (23 female, one male) enrolled in a yearlong field-based teacher education program participated in this study. Twelve of the preservice teachers were interns just beginning the first semester of their field experience and twelve were residents entering the second semester of their field experience. The preservice teachers were selected because

they were enrolled in the field teaching experience and were under the supervision of the researchers conducting this study which permitted close interaction with participants throughout the semester. Participants were teaching in grades one through five in three school districts with rural to urban populations. Classrooms represented a variety of teaching environments such as self-contained, modified self-contained, and team teaching. In addition, approaches to instruction and curriculum materials varied across classrooms and districts (e.g. integrated curriculum, basal readers, literature based, and content area subjects).

Data Sources

Primary data sources included practice teaching lessons and post-interviews with individual preservice teachers. Classroom observations of teaching lessons provided descriptive information about preservice teachers' declarative and procedural knowledge of strategic instruction. Teaching lessons were appoximately one hour in length. All of the preservice teachers followed a standard lesson cycle format that asked for their rationale in addition to standard items such as objectives, introduction, materials, information giving, guided and independent practice, closing and extension. Following observed teaching lessons, debriefing interviews were used to collect preservice teachers' verbal reflections about the strategies they selected and rationale for using them. Preservice teachers were asked to identify the strategies they had used and why they had selected them.

Secondary data sources included preservice teachers' lesson

plans, journal reflections, visuals and handouts, and anecdotal comments from liaisons and mentor teachers.

Data Collection

Data were collected during a fifteen week semester in 1996-97 school year by each researcher. Observation and interview instruments were designed by the research team and used to guide formal observations and debriefing interviews to maintain consistency across the researchers. (see Appendix A) Open-ended questions on the instruments allowed for narrative descriptions about the lessons. Researchers also paraphrased student responses to the interview questions. Instructional strategies are taught in two reading courses that preservice teachers take prior to their field experience. At the outset of the study, researchers conducted a strategy brainstorming session during seminar to informally assess the preservice teachers' repertoire of strategies in terms of those they recalled and identified as strategies.

Each researcher was responsible for observing and interviewing the preservice teachers that they also supervised in the field. Because interns spend the first few weeks of the semester observing mentors and becoming acclimated to students and classroom routines, formal observations and interviews were conducted once during the second half of the semester. Residents assume teaching responsibilities at the beginning of their residency semester, so two observations for each resident were possible -- one at mid-term and one in the fourteenth week of the semester. In addition, both interns and residents were observed informally throughout the

semester since liaisons had frequent interaction with their preservice teachers during weekly visits to schools in addition to seminar meetings.

Data Analysis

Data were analyzed analytically and recursively using constant comparative methods (Glaser & Strauss, 1967; Bogdan & Biklen, 1992). Analyses began soon after the first observations were completed and continued throughout the duration of study. While some researchers assumed more responsibility for initial data organization and analysis, overall, collaboration characterized the analyses with all the researchers examining the data and conferring to share and refine interpretations.

Soon after the first set of observations and interviews were collected, we conducted a preliminary analysis that involved reading observations and interviews to get an overall sense of the data. At this time, we looked for key characteristics of instruction and strategies that stood out in the observations and the interviews. Data were sorted according to distinguishing characteristics of individual preservice teachers in terms of their declarative (what strategies they had used), procedural (how they had implemented the strategies), and conditional knowledge (the reasons they gave for selecting and using strategies). This process led to the development of profiles of preservice teachers who were functioning at various levels ranging from limited to metacognitive levels of awareness. Consequently, it appeared that a continuum of strategy awareness was emerging. Initially the continuum consisted

of limited awareness at one end and metacognitive awareness at the other with an "aha" experience between these two levels. We used this initial continuum to further analyze the observations and interviews to determine levels of awareness of each preservice teacher. For this second analysis, an analysis guide that incorporated the continuum was developed and used to synthesize information from the observations and interviews. (see Appendix B)

After completing a second analysis of all the data, the researchers met to discuss their findings. Profiles of individual preservice teachers were refined and placements on the continuum were reviewed and revised until the team was satisfied. Refined profiles generated additional knowledge awareness categories. Consequently, the continuum was revised and the data was analyzed a third time to reconsider the placement of each preservice teacher and assure satisfaction with the profiles and placements.

When student profiles and placements were complete, we conducted a frequency count to determine the number of interns and residents falling into each profile on the continuum. A comparative analysis of residents' first and second observations was also conducted to note any changes in their awareness.

After profiling the preservice teachers, their reasons for selecting and using particular strategies were examined more closely. Based on their responses to the question "Why did you select these strategies" during post-lesson interviews, we compiled two lists of reasons for interns and residents. Each researcher independently analyzed each list for patterns, clustered related

reasons, and developed a semantic web representing relationships. Following this independent analysis, the researchers met to share and discuss their representations. As a result of this group analysis session, the research team generated two visual representations - one of interns' and one of residents' rationale for their selection and use of strategies. (see Figures 1 & 2)

Findings

Examination of the nature of preservice teachers' strategic instruction, based on observations of their teaching lessons and data collected during seminar sessions, revealed that preservice teachers' knowledge of strategies was multifaceted and appeared related to classroom experience. We found that what they designated as a strategy was not necessarily what we meant or what was delineated in their text. The strategies preservice teachers identified at the outset of the study and selected for their teaching lessons included instructional approaches and organizational methods in addition to literacy strategies aimed at enhancing understanding of text and learning in general.

Profiles of Preservice Teachers

To answer the question, What is the nature of preservice teachers' knowledge of strategy instruction, we developed profiles of interns and residents and determined their level of strategic awareness along a continuum. Profiles of first-semester interns revealed that nearly half (5) fell at the procedural level of awareness on the continuum. (see Figure 3) Their instruction was characterized by a heavy emphasis on the "how," modeling and

telling students step by step how to implement a strategy for the purpose of completing a product (chart, book, or handout) rather than constructing meaning. In essence, interns' instruction was more prescriptive and teacher centered than constructive and learner centered.

Three of the interns were considered to have a metacognitive understanding of strategy instruction. They told students why the strategy was effective as well as modeled how to use it. They also engaged students in activities that allowed them to apply, manage, and make decisions about strategies that were learner centered and constructive.

One intern was observed to have an "aha" experience during the post-lesson conference. This intern had read a trade book to activate and build knowledge of land formations before beginning the chapter in the social studies text. During the conference she remarked, "Oh, I see. I should have told students why we were reading a story before the lesson on landforms. I need to develop their ideas more and encourage more group interaction."

Two interns were profiled as being at the borrowed level. One intern that had used brainstorming because she had seen the mentor teacher use it stated "I'm not quite sure" why I selected it. The other intern also found to be functioning at the borrowed level stated that she used hands-on measuring tools as the strategy because "it's how students learn."

Only one intern was profiled as having limited awareness. This intern's instruction was described as lacking purpose, rationale,

and strategies. During the post conference interview, this intern identified cooperative grouping as the strategy employed. Yet, this was unrelated to the instructional goal of the lesson, which was to develop students' use of beginning and ending punctuation. The intern's reasons for selecting this particular strategy ("I need to practice this" and "I'm not familiar with this from my own background") were teacher-centered and reflected limited knowledge about the what, how, or why of strategies. Nevertheless, she associated cooperative grouping with social learning, stating that "work situations are cooperative" and (students) "must be able to work within groups."

Profiles of second-semester residents revealed a shift toward toward "aha" and metcacognitive levels from the first to second observations. (see Figure 4) The first observation revealed that more than half (7) of the residents were operating at a procedural level and none were found to be operating at the metacognitive level. By contrast, the second observation revealed that four preservice teachers had an "aha" experience and five were found to be metacognitive.

Shifts in residents' strategy knowledge appeared to be manifested as shifts in implementation from a skill-orientated to process-oriented strategy instruction. As residents became more metacognitive about strategy instruction, they were observed implementing strategies in unique combinations for specific purposes and coordinating sets of strategies to help students organize their thinking. Likewise, they were observed deliberately

explaining rationale for strategies to students and creating opportunities for meaningful application of strategies. For instance, one resident who was operating at the procedural level during the first observation did not share the rationale for using imagery but provided steps for students to follow. During the second observation, this resident coordinated prediction, lookbacks, and notetaking and shared with students how and when these strategies would most effectively facilitate comprehension. In essence, instead of teaching a strategy, residents were helping students use strategies to achieve a goal.

Not all the residents showed an increasing awareness of strategy knowledge from the first observation to the second. Two residents actually moved toward the procedural end of the continuum. One moved from the procedural level to the borrowed level and one moved from the "aha" level to the procedural level. One resident showed little shift in awareness, but instead fluctuated between the procedural and "aha" level. It is important to acknowledge that learning is a dynamic process. Therefore levels of strategic awareness are not discrete and movement in either direction along the continuum is a likely part of the growth process. Although we attempted to identify the preservice teacher's level of awareness at the time of the observation, they may have fluctuated between levels within and across lessons as they developed their strategic knowledge. Nevertheless, the continuum provided a way of noting major shifts in strategic awareness for individuals.

Preservice Teachers' Rationale

The second question we addressed was: What is preservice teachers' rationale for their selection and use of strategies during field-based teaching lessons? The reasons preservice teachers gave during the post lesson interviews for selecting and using strategies were examined to describe their conditional knowledge for strategy instruction.

As noted in Figure 3, the primary reason interns used strategies emerged as the "acquisition of information." Some of their reasons were "to make connections" "develop prior knowledge" "relate new to old" "generate ideas" and "figure it out." A few stated they wanted students to "see things" through the use of imagery or concrete objects. However, their reasons for the most part did not focus on helping children reorganize or reconstruct new knowledge for themselves.

Interns' reasons for using individual strategies were general rather than specific to the purpose or situation. For example, one intern stated the following reasons for using Directed Reading Listening Activity: "It seemed to work...made learning more enjoyable...there's not one right answer...and (it gives students) lots of ways to be successful." Another intern said that making predictions helped children "figure it out."

While "acquiring information" was interns' central reason for using strategies, recursive analyses of their reasons revealed three additional areas of rationale: management, affect, and framing instruction. Management was in terms of managing student

behavior. For instance interns stated that hands-on activities were to "keep students focused" and "on task." Similarly, interns noted that giving students "more to do" and "keeping them busy" were reasons for active involvement. Along with managing behavior, interns' reasons revealed a concern for affect in learning. Several interns stated that they had selected strategies because they wanted to "make learning fun" and "enjoyable."

Finally, framing instruction emerged as a focus on formats or methods that met student needs and promoted success. Interns stated that they selected strategies because they were "developmentally appropriate" and provided "scaffolds" or "guides" for students.

While the acquisition of information emerged as the primary rationale of interns, developing independent lifelong learners emerged as the primary rationale of residents. For example, residents identified "thinking," "higher order thinking," "internalization," "ongoing learning," and "fostering independence" as reasons for employing strategies that would "increase comprehension."

Recursive examination of residents' reasons also revealed the following additional areas of rationale: social construction, prior knowledge, meaningful transaction with text, active learning and affect. A social constructivist perspective was evident in residents' reasons for encouraging group interaction such as "to learn from each other," rather than "tell" students, they wanted them to "explore," "make connections," and "restructure"

information. Residents generally thought students needed to begin with "concrete" experiences and move toward "abstract." This was justification for placing students in situations where they could manipulate materials and create something new. Residents also were learner-centered in their consideration for students' previous experience with individual strategies. They noted that "familiarity" was important when making decisions about the amount of modeling and guided practice they need to offer students. The majority of residents realized the value of social interaction in learning. They identified "group interaction" and "peer teaching in groups" as reasons for using instructional strategies such as cooperative grouping, small groups, think pair share, and discussion.

In addition to being socially constructive in their rationale, many residents also verbalized the need for meaningful transactions with text. They stated that "meaningful instruction," "phonics in context," "finding information in the text," and "connections to print" were reasons for using strategies that were highly contextualized and increased students involvement with text. They also felt it was important to make abstract concepts "visual" through the use of graphic representations.

Like interns, residents' rationale reflected concern for affect. This was evidenced in residents' comments such as "to make learning fun," to encourage "student motivation," and "for enjoyment."

Many residents were also concerned with student engagement.

Some of the reasons they identified for encouraging active engagement included "active learning," "participation," "interactive," and "hands on." Along with these, residents indicated that it was also important to foster "creativity," "offer variety," and tap students' "imagination." One resident indicated that classroom management was the reason for involving students, but unlike interns, this related to managing group interaction when using small groups rather than controlling behavior.

Overall, residents' conditional knowledge about strategic instruction was much more extensive, constructive, and learner-centered than that of interns. Residents gave many more elaborate reasons for strategies they had used while interns gave fewer and abbreviated reasons. Furthermore, residents' reasons were consistent with their instructional objective and specific to the strategies selected while interns' reasons were more generalized.

Discussion

The most salient finding was that these preservice teachers possessed a repertoire of strategies that was broad and varied. When preservice teachers were asked to brainstorm the strategies they already knew at the beginning of the semester, their responses included general instructional strategies such as discussion, response squares, ways of organizing for instruction (cooperative grouping), specific reading strategies such as think-pair-share, story mapping, and ways of reading and dramatizing text(choral reading and reader's theater). This variation seemed to indicate that preservice teachers' implicit definitions of a strategy also

varied across individuals and even differed from our own. While some preservice teachers identified instructional approaches as strategies others identified skills as strategies. Obviously, there appears to be a need for clarification about what makes a strategy a strategy. Finally, preservice teachers did not necessarily employ strategies strategically. Merely modeling a strategy and then expecting students to use it in a rote fashion (ie. filling in the blanks of a story map) was not considered effective strategy instruction because it was not likely to develop a metacognitive level of awareness in the children.

Although most of these preservice teachers were readily able to list a respectable number of strategies, observations of teaching lessons revealed that some strategies were more popular than others. That is, students tended to "latch on" to a few strategies such as brainstorming or making predictions. Hence, these were observed repeatedly across all preservice teachers.

While some preservice teachers used the same strategies repeatedly, others were observed using as many strategies as possible in one lesson as if to "show off" their repertoire of strategies. For example, one student combined brainstorming, Venn diagramming, reading aloud, story mapping to make flip books and shared writing all in one lesson. The result was a procedural approach to strategy use for the sake of using strategies rather than an integration of strategies to accomplish a meaningful instructional goal or to develop students' ability to modify and adjust strategies to construct meaning.

We found that the preservice teachers usually provided modeling and verbal explanations about strategies in conjunction with connected text, visuals or pictures. Occasionally, cooperative grouping and peer teaching were used to encourage social learning and provide students with scaffolded practice using a strategy. However, the majority of preservice teachers did not involve children in interactive demonstrations in which they were working along side the teacher to practice a strategy. On the contrary, strategy instruction tended to be one-sided with preservice teachers modeling and telling students how to use the strategy and then assigning an activity in which students used the strategy with some guided practice. In all but a few instances, both interns and residents did not share the why or when of the strategy(ies) they were modeling until they were prompted by the researchers during the post-lesson conference. Also, for the most part, the preservice teachers gave no indication that they were planning new situations in which students could independently practice the strategies being taught. Consequently, there was little evidence that instruction was facilitating transfer and generalization of strategic knowledge to the children.

Implications for the Classroom

Although we cannot make sweeping generalizations about all preservice teachers due to our small sample, this study has enlightened us about our own preservice teachers' knowledge of strategies and the possibilities for enhancing it through teacher education. Because this study was conducted within field-based

teaching experiences, we were able to examine preservice teachers' strategic knowledge where it was most relevant - in the classroom.

Our preservice teachers appeared to benefit from the process of reflection about strategy instruction. Explaining and verbalizing their rationale for using strategies seemed to raise their awareness of important factors to consider when planning for strategic instruction. Guided reflection during the post conference focused their attention particularly on the purpose of individual strategies and made them think about the meaningfulness of strategy implementation. It also raised awareness of the importance of communicating this knowledge to children. One intern commented later, "Now I know that I should tell them why, not just show them. I never thought about that before." Guided reflection about actual teaching situations appeared especially helpful because the preservice teachers were prompted to think and talk about strategy instruction in terms of their practical application. This provided an experience-based model to guide future decisions about strategy selection when planning strategic instruction. Through the process of guided reflection, preservice teachers were becoming reflective practitioners who were using their professional knowledge to improve their own teaching (Schon, 1983).

It appeared that the preservice teachers' level of strategic knowledge grew with reflection about their strategic instruction. Between the first and second observations, residents became much more attentive to the purposes for using particular strategies and began to communicate these to students. The initial

reflection seemed to prompt them to look ahead and plan for strategy instruction with purposes and students in mind. As a result of this study, we recommend that preservice teachers project and reflect about their strategy selection and use. By projecting, or thinking and planning ahead, they would consider the purpose of the strategy and if it is consistent with their instructional objectives, students learning styles, and the activities. They also would be prepared to explain to students the conditions—why and when- in addition to the procedures for using strategies. Planning to share knowledge about the conditions of strategy use just might increase the likelyhood that preservice teachers will do so when they teach. Likewise, by reflecting on their use of strategies in connection with real teaching experiences, novice teachers may be better able to think about what they could do in future lessons to improve their instruction themselves. We believe the process of projection and reflection needs to be guided, therefore, we have modified the post-lesson conference to be used as a scaffold for encouraging thoughtful planning of strategic instruction and prompting reflection afterwards. (see Appendix C) Our intention is to facilitate thinking about strategy instruction as a process rather than merely an activity to get done. The questions are designed to scaffold preservice teachers' thinking about the purposes and application of strategies for students. The first three questions focus on the preservice teacher's knowledge of strategic instruction. Questions 4 - 5 are intended to direct

the preservice teacher's attention on the development of students' strategic knowledge and facilitate internalization and transfer to new situations. Post lesson questions are intended to encourage self-evaluation of their strategic instruction and extend thinking beyond the implementation of strategies during the teaching experience. These questions also may be used to guide discussion about strategic teaching during conferences with mentor teachers or teacher educators.

In summary, it is important that teacher education programs help preservice teachers develop their conditional knowledge about strategies so they can develop learners who are also strategic. Instruction needs to guide the development of this knowledge by focusing attention on the "why" and "when." Also, it should be woven throughout actual teaching situations. The process of projection and reflection can help preservice teachers become knowledgeable about strategy instruction so they in turn help children become independent, self-regulated learners.

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Appendix A

Observation

Intern___ Resident___ Date_____

School _____ Grade ___ Observer_____

1. Focus of lesson:
2. Text(s) students were reading:
3. Strategies used by intern/resident:
4. How were these strategies presented?

   __modeling __visual organizers __ verbal explanations

   __written explanations __pictures __examples

5. How often did students practice using the strategy(ies)?

   __none __once __sometimes __frequently

6. How much guided practice did the intern/resident give students?

   __none __five minutes __ 15 minutes __more than 15 minutes

7. How much independent practice did students have?
8. Did the intern/resident tell students the purpose of the strategy(ies)? ___YES ___NO
9. To what extent was the purpose of the lesson accomplished?

   __none __slightly __very much __completely

Post Lesson Conference

1. What was the purpose of your lesson?
2. What strategies did you use to achieve this purpose?
3. Why did you select these strategies?
4. How did you help students use these strategies?
5. How frequently do you use these strategies when teaching?

Appendix B

Continuum of Awareness

Limited	Borrowed	Procedural	"AHA"	Metacognitive

Profile Descriptors

Limited Awareness: Little or no evidence of strategies; teacher centered rather than learner centered; preservice teacher is unable to justify strategies used; strategies are inconsistent with purpose of lesson.

Borrowed: Strategies are selected because mentor or book suggested; no rationale; focus on procedures of implementation; teacher directed.

Procedural: Preservice teacher teaches strategies for the sake of using strategies; focus is on steps of implementation and skills.

"AHA": Preservice teacher recognizes during conference that strategies need to be integrated in a meaningful context; realizes rationale is important and should be shared with children.

Metacognitive: Strategies are appropriate and consistent with lesson goals; preservice teacher can explain rationale for strategies that is reasonable; shares rationale with children; learner-centered and process oriented; meaningful application of strategies.

Appendix C.

PRE/POST LESSON GUIDE

Pre Lesson Planning:

1. What is the purpose of your lesson?
2. What strategies will you use to achieve this purpose?
   a. Are these new or familiar strategies for students?
3. Why will you use these particular strategies?
4. How will you help students use these strategies in this lesson?
   a. What will you share with students about why these strategies are useful?
   b. What will you share with students about when and where to use these strategies in this lesson?
5. How will you help students learn to independently use these strategies in other situations?
   a. What will you share with students about why these strategies are useful in other situations?
   b. What will you share with students about when and where to use these strategies in other situations?

Post Lesson Reflection:

6. How did students use the strategies to construct meaning?
7. In what ways have students become more strategic, independent learners?
8. How will you have students apply these strategies in future lessons?

Figure 3.

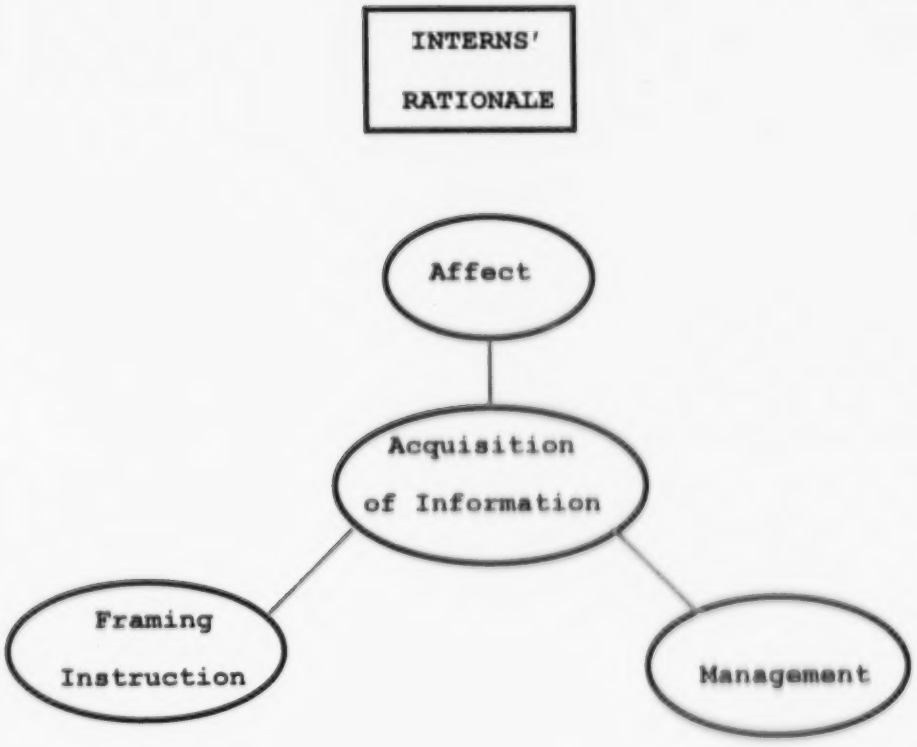
INTERNS' RATIONALE
Affect
Acquisition of Information
Framing Instruction
Management

Figure 4.

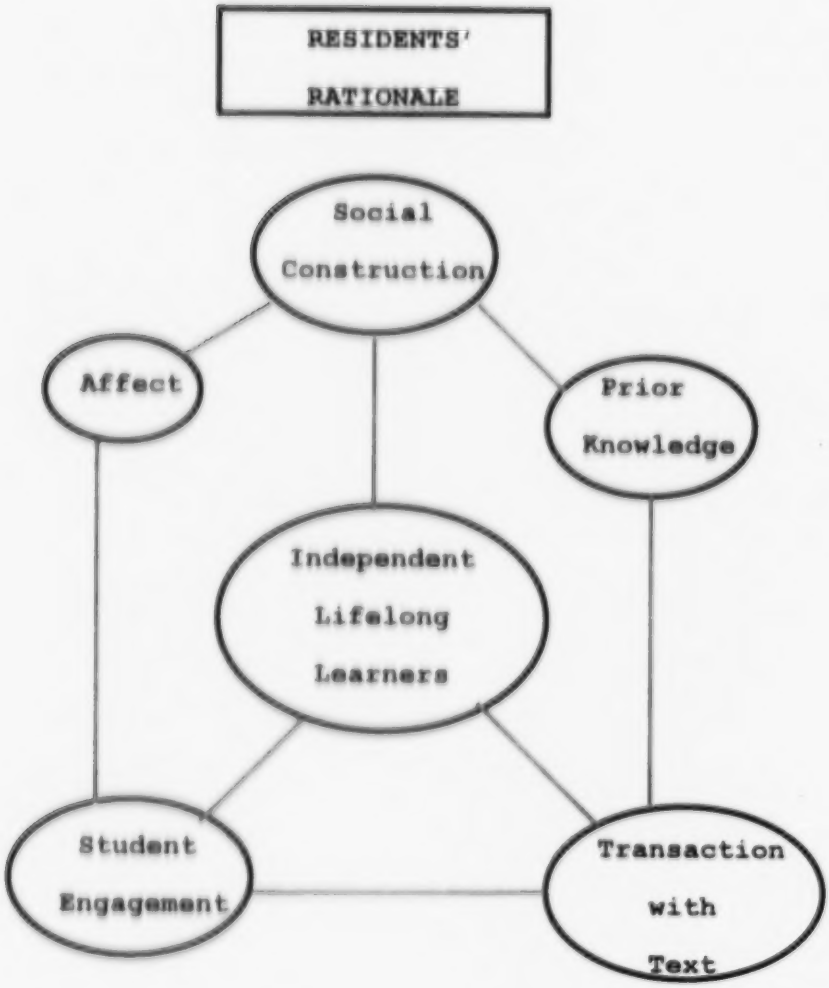
RESIDENTS' RATIONALE
Social Construction
Affect
Prior Knowledge
Independent Lifelong Learners
Student Engagement
Transaction with Text

Figure 3

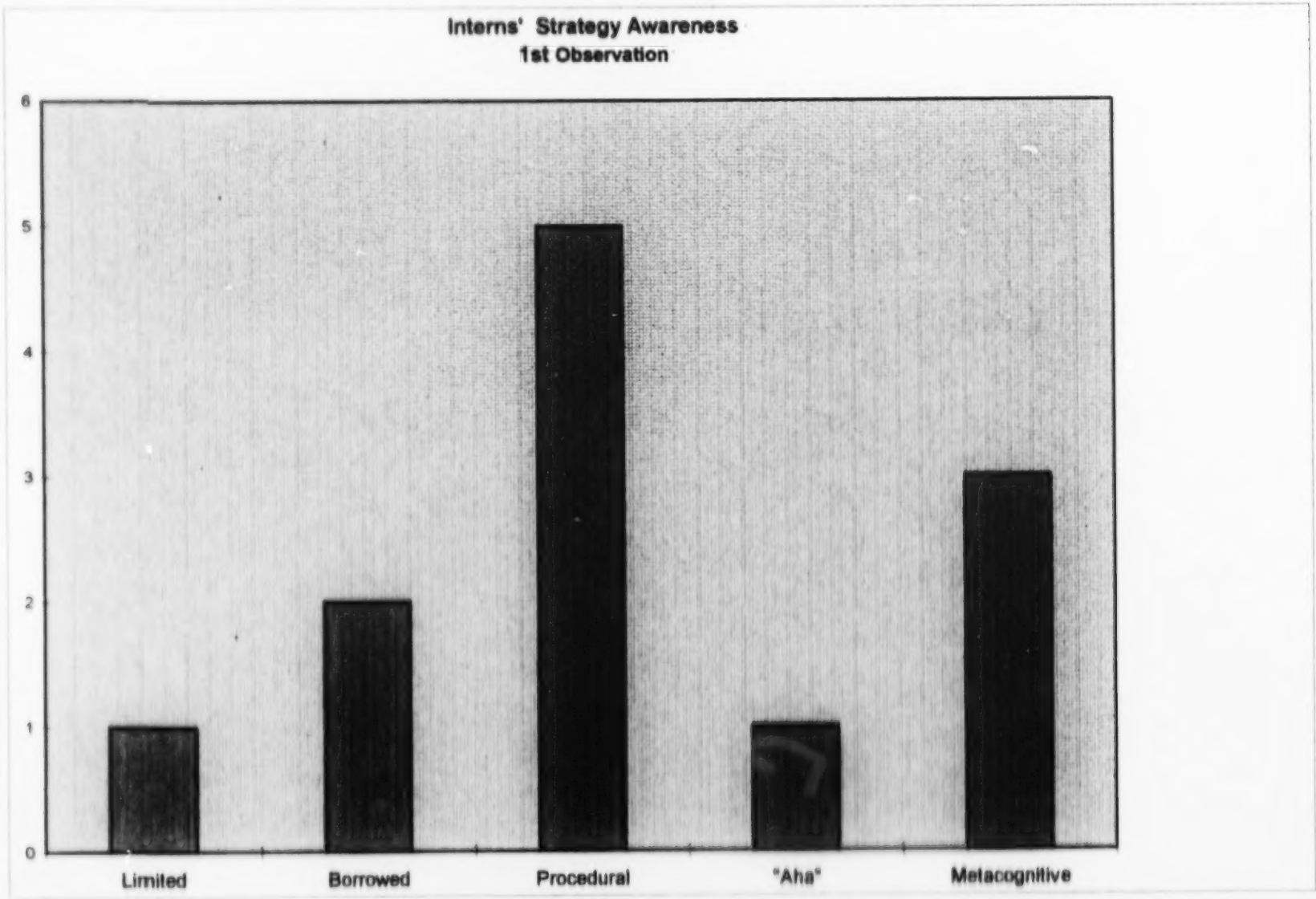

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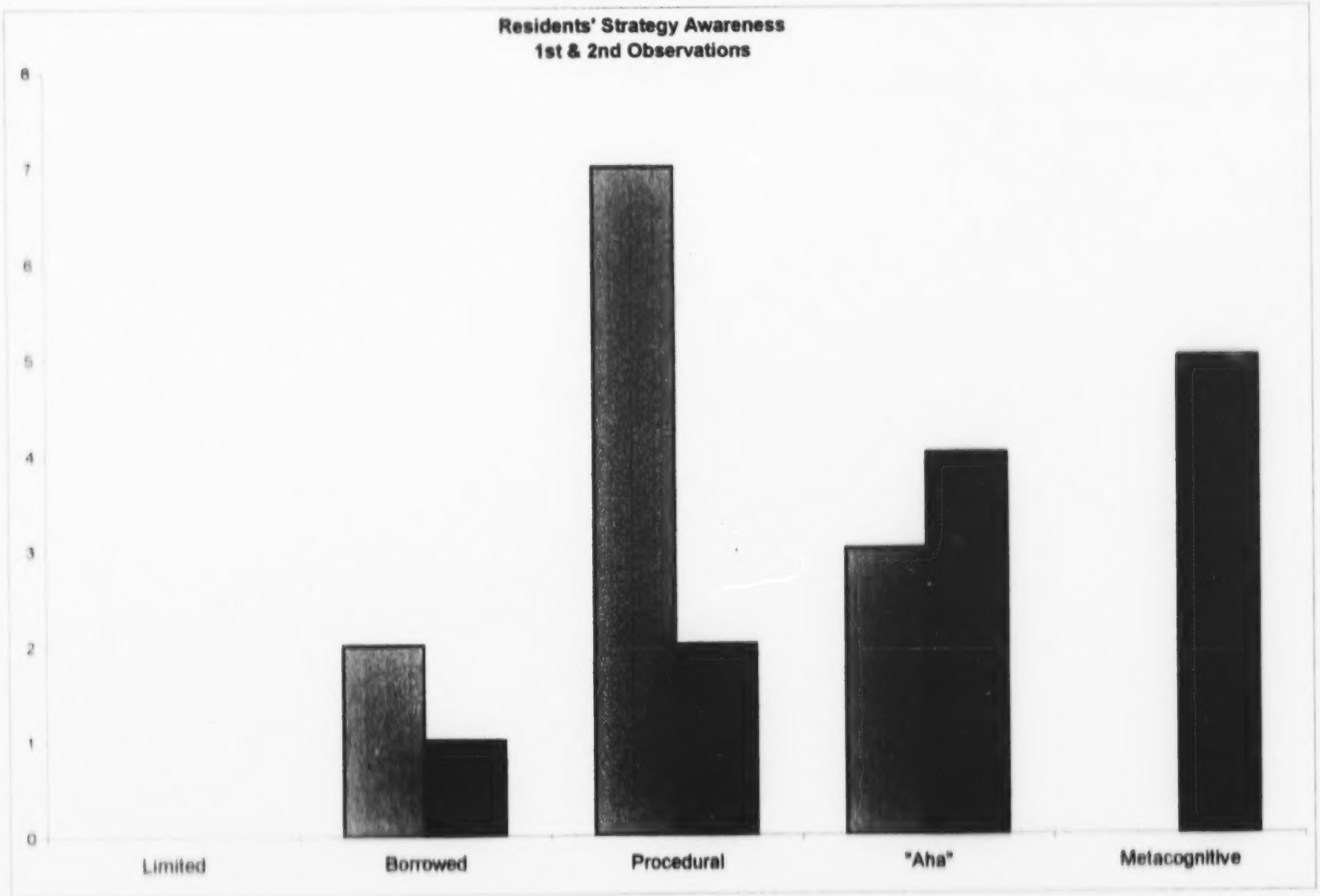
Figure 4



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